

Work Order ID 89349 -2

August-24-12 1:19:42 PM

\*89349\*

Page 1

Item ID: D6101-007

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: Saddle Billet

Stop \*NS2\*

Start Date: 8/27/12 Start Qty: 40.00 \*40\*

Cust Item ID:

Required Date: 9/07/12 Req'd Qty: 40.00 \*40\*

Customer:

Reference:

Approvals: Process Plan: MJS

Date: 12/08/29 Tooling:

Date:

Run Start \*NR1\*

QC:

Date: SPC (Y/N):

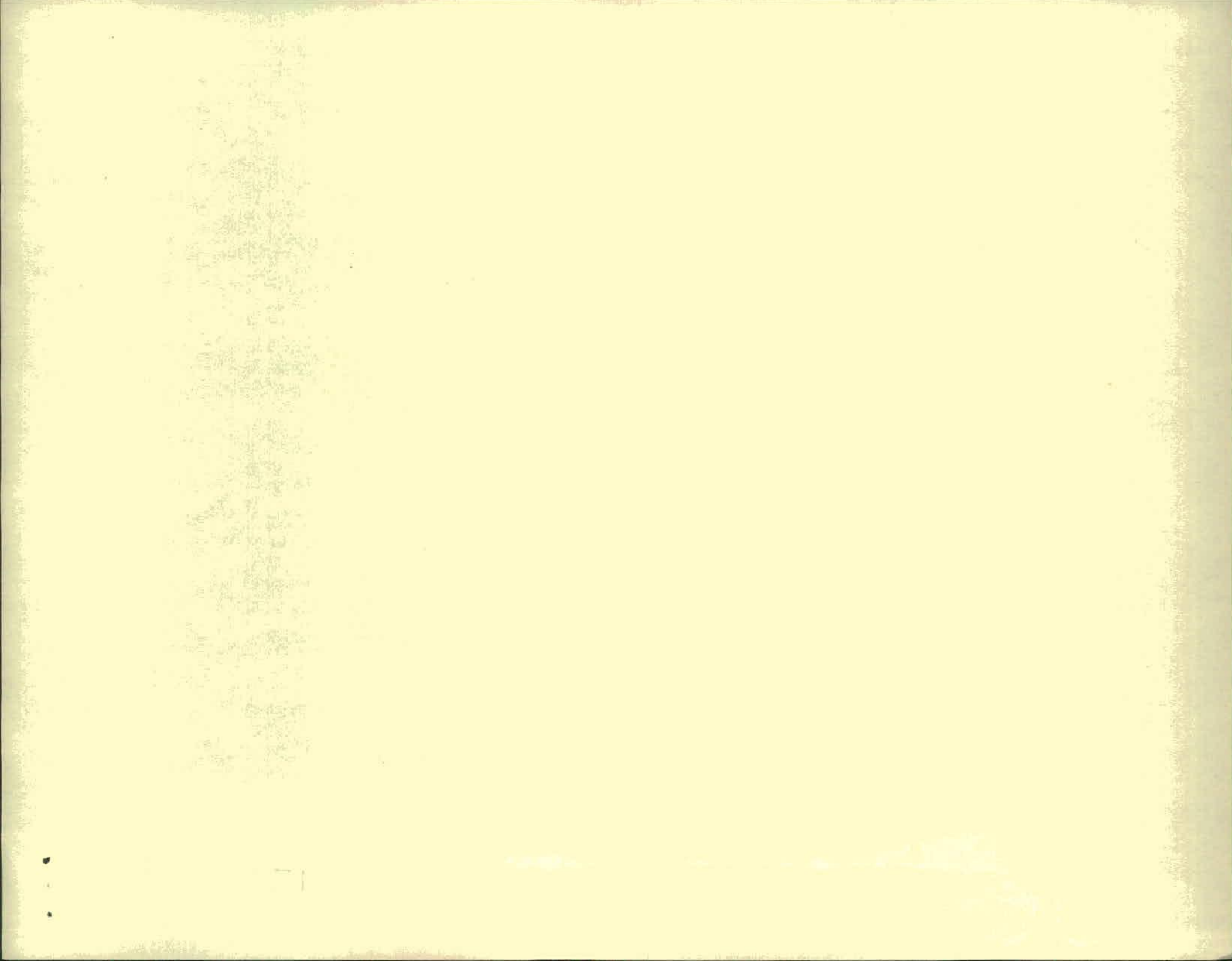
Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								
100	PURCHASING	0.00							
*100*									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 17789								
	a) Description: Aluminum billet								
	b) 7.750" x 8.250" x 2.50" thick								
	c) Tolerance on all dimensions are +0.030"/-0.000"								
	d) Grain direction along 7.750" length								
	e) Material: 7075-T7351 (QQ-A-250/12)								
	f) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
*110*									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								

CX 12/08/29 (20)

CX 12/11/13 (20)



# Work Order ID 89349

August-24-12 1:19:42 PM

**\*89349\***

Page 2

Item ID: D6101-007

Accept

**\*N9000040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle Billet

Start Date: 8/27/12 Start Qty: 40.00

**\*40\***

Cust Item ID:

Required Date: 9/07/12 Req'd Qty: 40.00

**\*40\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

120

QC6- Inspect dimensions to drawing

0.00

**\*120\***

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6101

*OK 12/09/14*

*20*

130

Identify as per dwg & Stock Location: *MAT 41*

0.00

**\*130\***

Packaging

Memo

0.00

Packaging

*OK 12/09/14*

*20*

140

QC21- Final Inspection - Work Order Release

0.00

**\*140\***

QC

Memo

0.00

Quality Control

*12/9/18*

*12-09-20*



# Picklist Print

August-24-12 4:19:42 PM

Page 1

Work Order ID: 89349

Parent Item: D6101-007

Parent Item Name: Saddle Billet

Start Date: 8/27/12

Required Date: 9/07/12

Start Qty: 40.00

Required Qty: 40.00

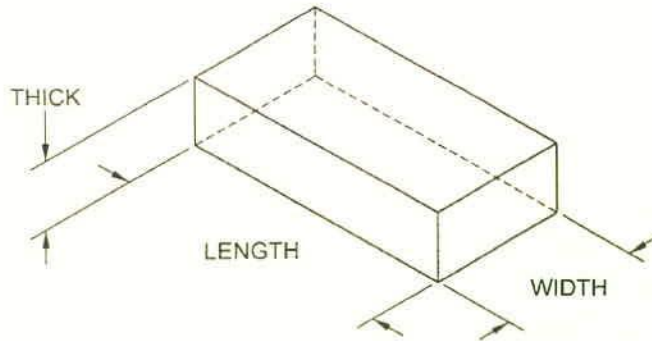
Comments: IPP A: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007P 7075-T7351 8.25X7.75X2.5		Purchased	No			110	Each	0.0000	1	40			

10/2/9/13 (20)



# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**RELEASED**  
09/15/15

12/30/19  
29349 MCT  
SPECIFICATION  
CONTROL DRAWING  
DART AEROSPACE LTD  
HAWKESBURY, ONTARIO, CANADA

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



**Castle Metals**

A. M. Castle &amp; Co.

BORDERS OF COMMERCE DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:1461897

Expédié de / Ship From:		Vendu à / Sold To:		Expédié à / Ship To:		Livré à / Deliver To:	
A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		WILL CALL-MONTREAL 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA	
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms		Transporteur / Carrier		No du Bon de connaissance / BOL No	
11-SEP-2012	ORIGIN	Prepaid		MANITOULIN		1461897-2	

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch - MON
---	---

N° de commande / Order No	N° de ligne / Line No	N° d'article / Item No	Description	
2398728	1	752241.MO	2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 8.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12	
N° de bon de commande / Purchase Order No	Nbre de pièces / Part Number		Qté commandée / Ordered Qty	Qté Facturée / Invoice Qty
17784	YOUR ITEM NUMBER: D6101-007		20.00 PCS	20.00 PCS

Détails / Details		SHIP AS SOON AS REC'D					
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty(LBS)
117947187		470001A9		20			330.6337

Ces marchandises, technologies, sont sujettes aux règlements de l'Export Administration et du département d'état des Etats-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des Etats-Unis est interdite.

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Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned.

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 11-SEP-2012 02:44:45 PM



**Castle Metals<sup>®</sup>**

A. M. Castle & Co.

BORDER FUM MARCHANDISES

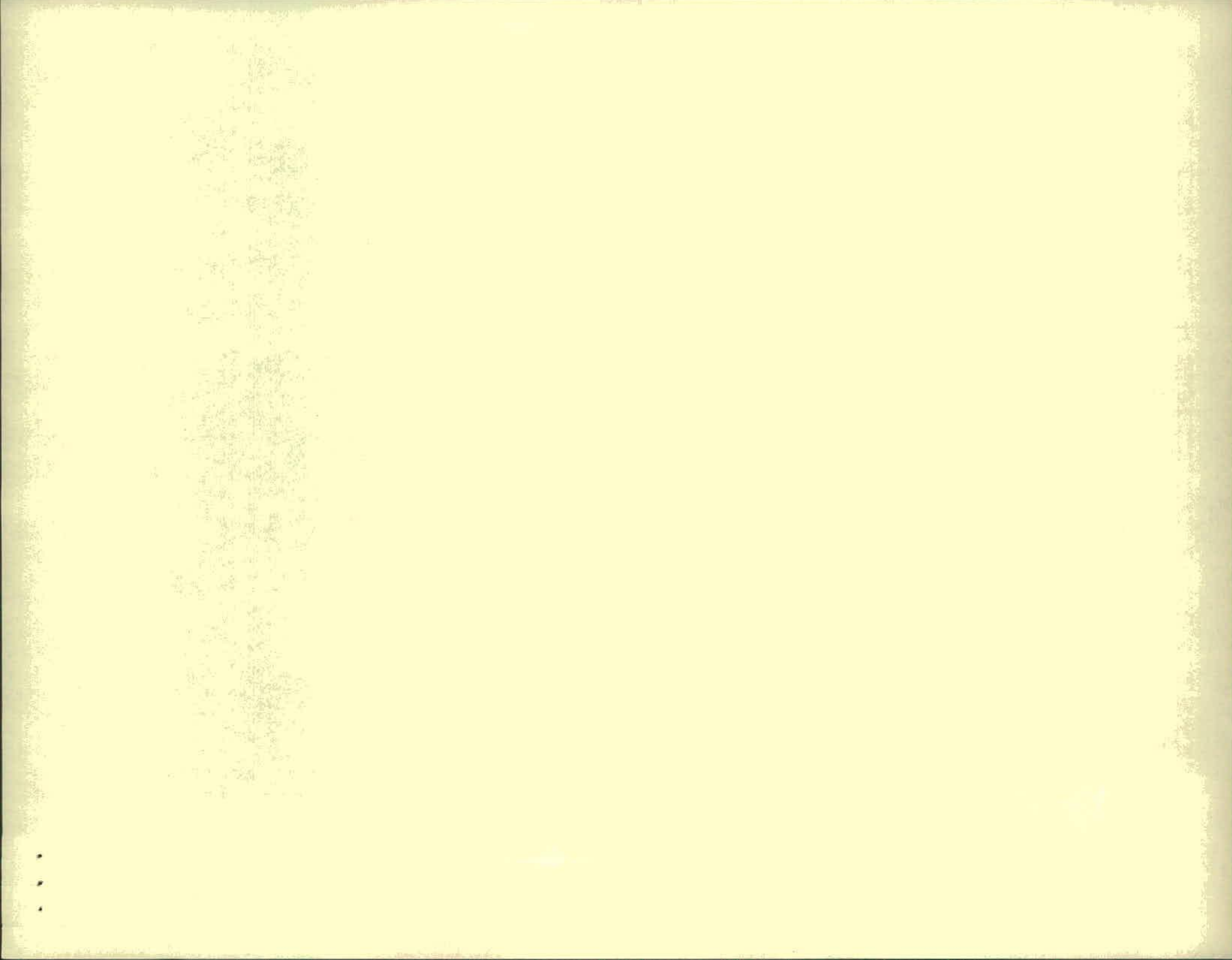
Page 2 of 2

for credit.		Date:	Name:
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:			

These commodities, technology or software were not exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Exported: 11-SEP-2012 02:44:43





## SHIP TO:

CASTLE METALS AEROSPACE  
15 EXECUTIVE BLVD.  
ORANGE, CT 06477

# KAISER ALUMINUM

Trenwood Works - Spokane, WA 99215

Phone: (800) 367-2586

## SOLD TO:

CAS AERO% A M CASTLE METALS  
ATTN:BOB OHR % ACCTS PAYABLES  
3400 NORTH WOLF RD  
FRANKLIN PARK, IL 60131

## CERTIFIED TEST REPORT

Serial Number

4160737

CUSTOMER PO NUMBER: 8353		WORK PACKAGE:		CUSTOMER PART NUMBER: 750797 AMS CA-15419		SHIP RUN/LOAD ID: 101523/14		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1082356	LINE ITEM: 1	SHIP DATE: 23-APR-2009	ALLOY: 7075	CLAD: BARE	TEMPER: T 351	PRODUCT DESCRIPTION: MILL FINISH PLATE			
WEIGHT SHIPPED: 7190 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2022411		GAUGE: 2.5000 IN		WIDTH: 48.500 IN		LENGTH: 144.500 IN	

## Certified Specifications

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
GSS16100/RevG/Amd1

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CMMP 025/RevR  
EAC MS1011/RevE  
MMS 159/RevN

AMS-STD-2154  
BAC 5439/RevH  
CSTI 006/RevC  
GAMPS 9101/RevB  
PS 21211/RevK

Test Code: 4287

## Test Results

Lot: 467299A4 Cast 222 Drop 18 Ingot 1

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.8 : 73.0 (502 : 503)	31.3 : 31.5 423 : 424	11.1 : 11.1

(ASTM E1004)

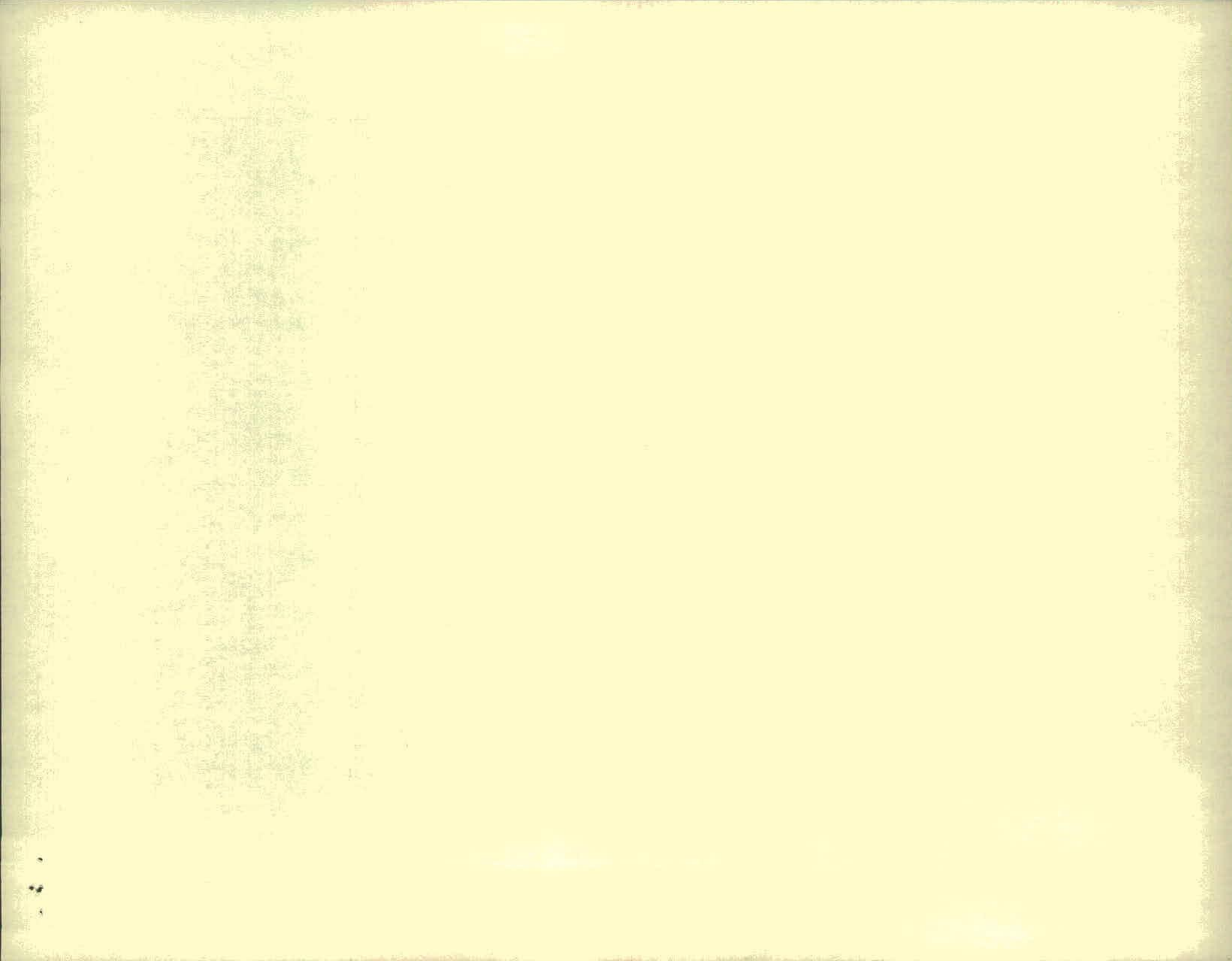
(EN 2004-1)

Conductivity %IACS :	40.6 Min	10.8 Max
(MS/M) :	23.5 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.20	1.5	0.02	2.5	0.20	1.7	0.04	0.01	0.01	TOT 0.05

ENTERED APR 30 2009





**KAISER  
ALUMINUM**Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number  
4160737

Lot: 470001A9 Cast 222 Drop 27 Ingot 2

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.4 : 74.4 (499 : 513)	60.3 : 63.3 (416 : 436)	11.1 : 11.2

(ASTM E1004)  
(EN 2004-1)

Conductivity %/ACS :	39.8 Min	41.6 Max
(MS/M) :	23.1 Min	24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.19	1.5	0.02	2.5	0.20	5.8	0.04	0.01	0.01	TOT 0.05

**ALLOY LIMITS**

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	5.1	0.20	0.05	0.05	TOT	0.05

**Aluminum Remainder****TEST NOTES**

7075-T7351 plate 3.001-3.500" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-1. 7075-T7351 plate 3.501-5.000" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

**CERTIFICATION**

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SUPPLIED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF THE SPECIFICATION CITED HEREIN. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION CITED HEREIN. ANY WARRANTY IS LIMITED TO THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. NO PARTS OR ENTIRE COPIES OF THIS CERTIFICATE MAY BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS IS A VIOLATION OF FEDERAL LAW. (50-9001:2000 CERTIFIED.)

BILL POYNOR, LABORATORIES SUPERVISOR



ENTERED APR 30 2009

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